

**SOMATOM Pro.Pulse**

# **Unlock Dual Source CT. Everywhere.**

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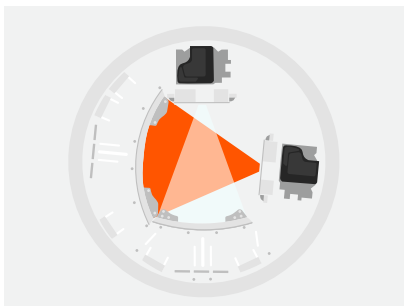
**SIEMENS**  
**Healthineers**

# Provide advanced diagnostic imaging for your patients

Today there are still too many patients who do not receive high-quality CT imaging for a conclusive diagnostic assessment – whether because of challenging conditions such as high and irregular heart rates or because they live in a location with more limited diagnostic capabilities.<sup>1</sup>

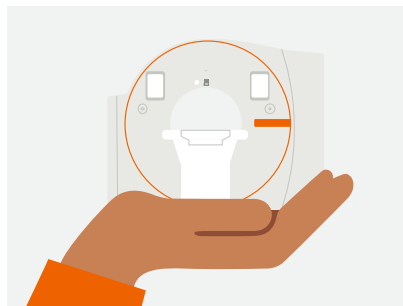
With our one-of-a-kind Dual Source technology, SOMATOM Pro.Pulse delivers the temporal resolution and scan speed needed to reduce motion artifacts in patients with high or irregular heart rates or limited breath-hold capabilities. myExam Companion enhances the scanning experience for users and patients: Intuitive user interfaces provide a high level of user-friendliness, while visual patient instructions increase patient comfort. With reliable service solutions, and designed to help you achieve operational excellence, the SOMATOM Pro.Pulse is a smart investment for a wide range of hospitals.

## SOMATOM Pro.Pulse – Unlock Dual Source CT. Everywhere.



### Dual Source CT: One-of-a-kind imaging technology

Radiology departments must be able to scan patients with a large variety of clinical conditions 24/7. An advanced CT solution like SOMATOM Pro.Pulse offers the technical advantages required to deliver high-quality images thanks to high power, speed, and precision enabled by Dual Source technology.



### Intelligent workflow simplifies advanced imaging

Advanced CT imaging such as cardiac CT can be challenging for both patients and users. Unwanted scan variations, patient movement, or less compliant patients can affect overall diagnostic quality. myExam Companion helps patients and users every step of the way, making the exam more comfortable while improving the consistency of scan protocols.



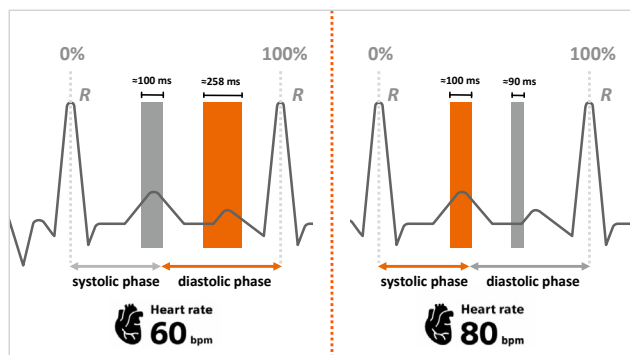
### High-end technology is now cost-efficient

Infrastructure costs, continuous staff education, fleet management, and service costs are just as important as equipment costs when purchasing a CT scanner. SOMATOM Pro.Pulse is an intelligently designed scanner that helps reduce the financial burden from the start – with comprehensive services, a broad education portfolio, ample fleet management tools, and more.

<sup>1</sup> Goyal et. al *Clinical and Economic Implications of Inconclusive Noninvasive Test Results in Stable Patients with Suspected Coronary Artery Disease: Insights from the PROMISE Trial*

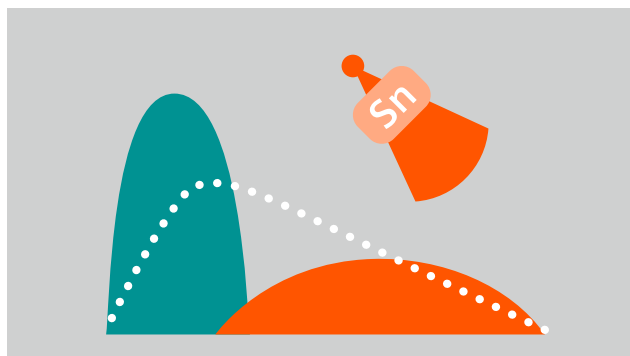
## Dual Source CT: One-of-a-kind imaging technology

SOMATOM Pro.Pulse has been designed to deliver high-quality images of patients with a broad variety of clinical conditions – to support you in making conclusive diagnostic assessments.



### Simply turn to the systolic phase

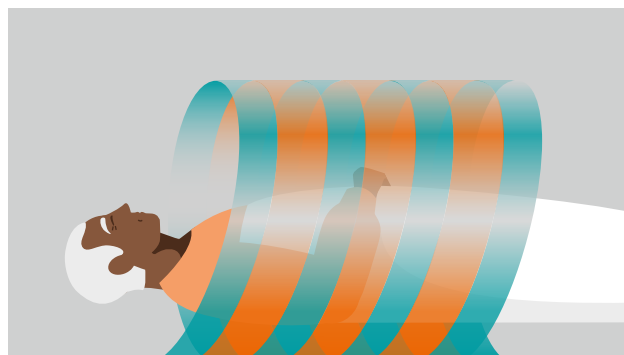
In cardiac CT imaging, the length of the diastolic phase of the cardiac cycle is dependent on the heart rate. The systolic phase, however, remains stable. Dual Source CT catches the same time window independent of the heart rate – with systolic scanning. Thanks to its high temporal resolution of 86 ms, SOMATOM Pro.Pulse acquires scans with high image quality even for patients with high and irregular heart rates – and without the use of beta-blockers.



### Spectral imaging with one scan

Especially in oncology, the reliable evaluation of patient-specific therapies can prevent ineffective treatment and improve patient outcomes. By using two tubes to acquire low- and high-energy datasets at the same time, Dual Source Dual Energy (DSDE) provides both morphological and functional information in a single non-contrast scan – and with complete dose-neutrality. Combining DSDE with our Tin Filter technology, SOMATOM Pro.Pulse offers a 30% higher spectral separation for a more precise material differentiation than conventional Dual Energy imaging can provide.<sup>2</sup>

<sup>2</sup> Data on file



### Free-breathing imaging at low dose

For wide anatomical coverage, extremely fast acquisition speeds are required to prevent motion artifacts and keep the dose low. Conventional single-source CT scanners have to compromise with low-pitch spiral or multiple sequential scans. With Dual Source CT technology, the second tube closes the gaps. Our Flash scan mode combines the high temporal resolution with fast table movement for very high routine acquisition speeds. This allows you to perform scans like an ECG-gated aorta at 37 cm/s – without patients having to hold their breath.



### No sedation in pediatric imaging

Pediatric patients usually cannot follow breathing instructions and cannot hold still. Sedation is one solution to this challenging situation, but it requires time and specially trained staff. With the fast scan coverage in Flash mode of 37cm/s, the need for sedation may be avoided.

# Unlock Dual Source technology for different clinical fields

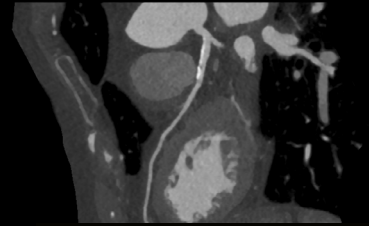
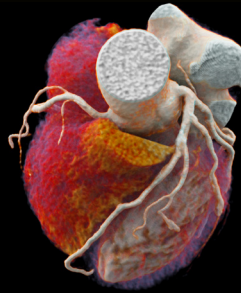
In your daily routine or for complex clinical cases: SOMATOM Pro.Pulse with our one-of-a-kind Dual Source technology delivers high-quality diagnostic CT images. See for yourself!



CTA of carotids and brain vessels with Dual Energy 80/Sn140 kVp CTDI<sub>vol</sub> 0.4 mGy<sup>1</sup>

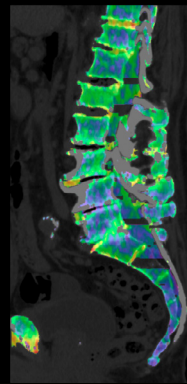
<sup>1</sup> Courtesy of Morges Hospital, Morges, Switzerland  
<sup>2</sup> Courtesy of Radiologische Allianz, Hamburg, Germany

## Cardiovascular



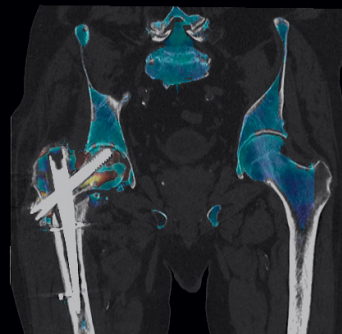
Cardiac scan at low dose 70 kVp CTDI<sub>vol</sub> 3.45 mGy<sup>2</sup>

## Emergency



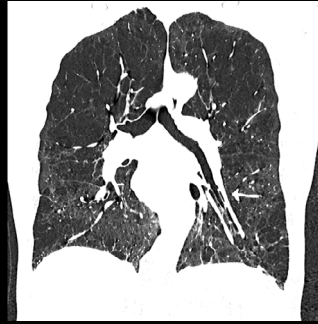
Bone marrow edema with Dual Energy 100/Sn140 kVp CTDI<sub>vol</sub> 18 mGy<sup>1</sup>

## Musculoskeletal



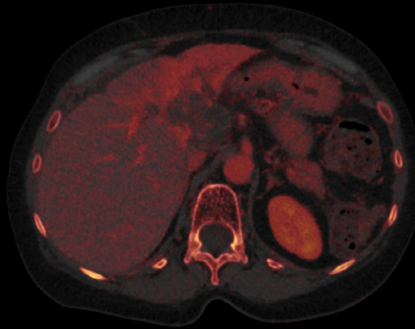
iMar and Dual Energy to reduce metal artifacts 80/Sn140 kVp CTDI<sub>vol</sub> 3.2 mGy<sup>1</sup>

## Pulmonology



Dual Energy assessment of lung perfusion deficit 100/Sn140 kVp CTDI<sub>vol</sub> 4.35 mGy<sup>1</sup>

## Oncology

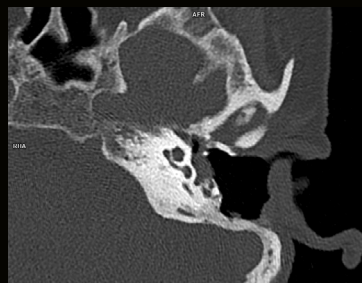


Oncology assessment with Dual Energy 80/Sn140 kVp CTDI<sub>vol</sub> 6.5 mGy<sup>1</sup>

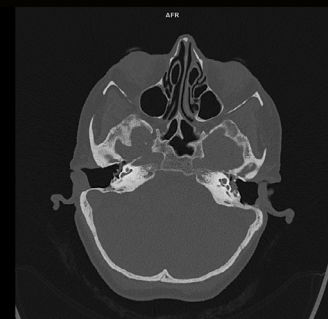
## Neurology



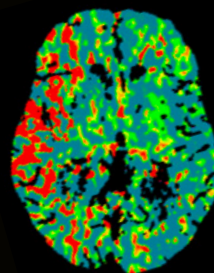
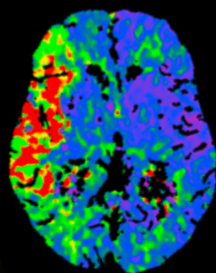
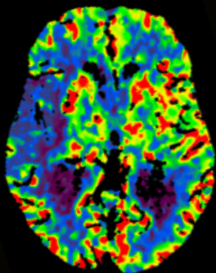
120 kVp CTDI<sub>vol</sub> 28 mGy<sup>2</sup>



Sn100 kVp CTDI<sub>vol</sub> 8.7 mGy<sup>2</sup>



Sn100 kVp CTDI<sub>vol</sub> 8.7 mGy<sup>2</sup>

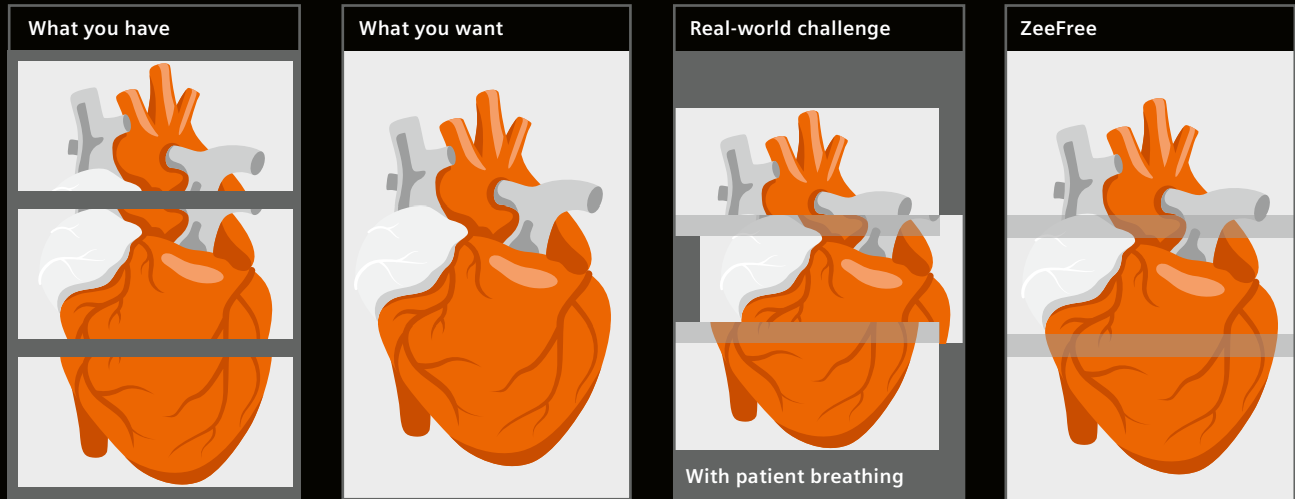


70 kVp CTDI<sub>vol</sub> 103 mGy<sup>1</sup>

<sup>1</sup> Courtesy of Morges Hospital, Morges, Switzerland  
<sup>2</sup> Courtesy of Radiologische Allianz, Hamburg, Germany

# ZeeFree: Optimal cardiac imaging independent of detector width

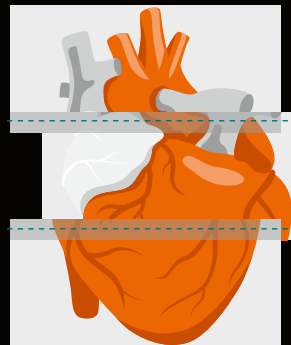
A novel cardiac CT reconstruction feature that enables the alignment of stacks in ECG-gated images typically caused by patient breathing or movement during the scan acquisition. The feature achieves this independent of the physical detector width of the acquired data.



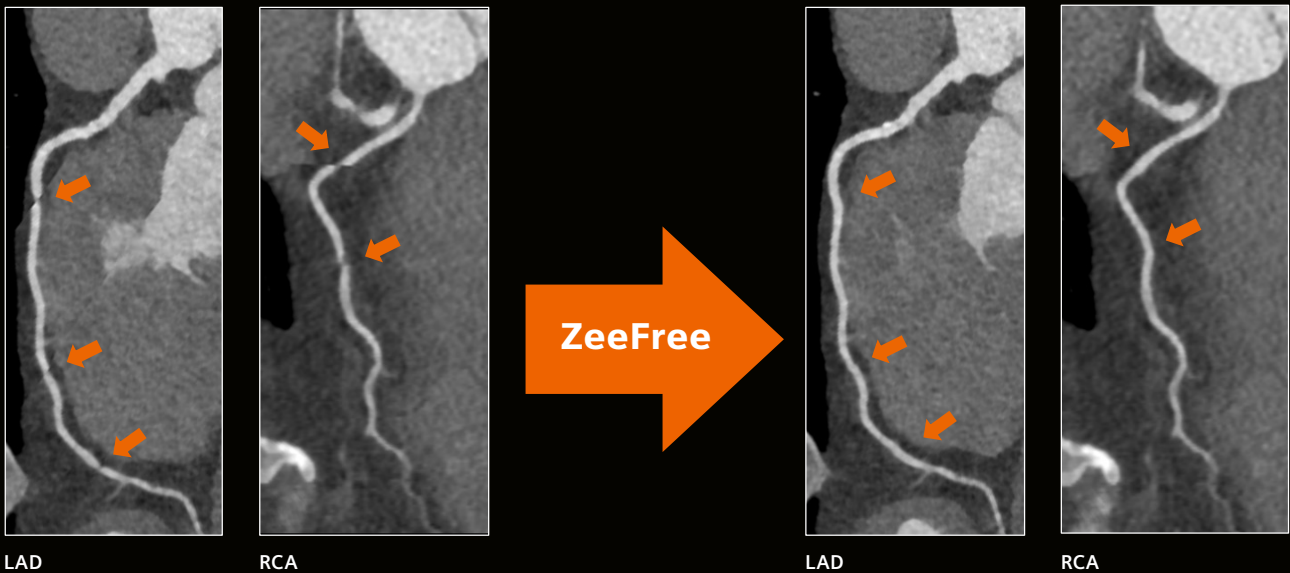
## How ZeeFree works

This image is based on a non-rigid registration step enabled by the available overlapping image data between neighboring cardiac cycles.

The complex algorithm sees to it that everything is optimally aligned in order to display the morphology as intended.



## ZeeFree – Optimal cardiac imaging independent of detector width



Courtesy of Morges Hospital, Morges, Switzerland

## Intelligent workflow simplifies advanced imaging

SOMATOM Pro.Pulse comes with **myExam Companion**, a set of smart technologies that improve the scan experience for both users and patients – while also enabling standardization and workflow efficiency.

### Flexible mobile workflow

Staying close to a patient can have a calming effect. Using the tablet or remote control, users can stay with their patients longer while preparing a scan. It also saves valuable time when setting up the protocols because they don't have to walk to the console.

### Precise patient positioning

Precise patient positioning is essential for high-quality CT imaging. With the world's first gantry-integrated FAST 3D Camera, SOMATOM Pro.Pulse makes precise patient positioning easy – powered by AI. Optionally, the camera can also be installed on the ceiling.

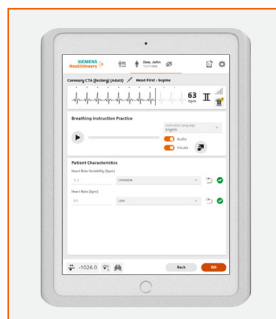
### Improved patient assistance

myExam Care is our new patient-centric approach that improves patient assistance. For some patients, it's not easy to comply with breathing commands. CARE Breathe provides visual guidance with intuitive color-coded breath-hold commands. It is displayed on the front and back of the gantry.



### Intelligent imaging guidance

Different users have different skill levels. The intelligent guidance from myExam Companion supports users to confidently perform CT examinations from routine to the most advanced scans such as cardiac imaging or stroke – enhancing standardization of operation in your institution.



### Enhanced user confidence

Having control at all times also supports users to acquire high-quality scans. While creating a calming atmosphere for patients, the CARE Moodlight also indicates for users the progress of a scan. And with the CARE 2D Camera, they can monitor a patient during a scan, when they are inside the gantry.

## High-end technology is now cost-efficient

With SOMATOM Pro.Pulse, you get more than just a CT scanner. You also benefit from easy fleet management and comprehensive services – to support you in reducing the total cost of ownership.

### Keeping lifecycle costs down

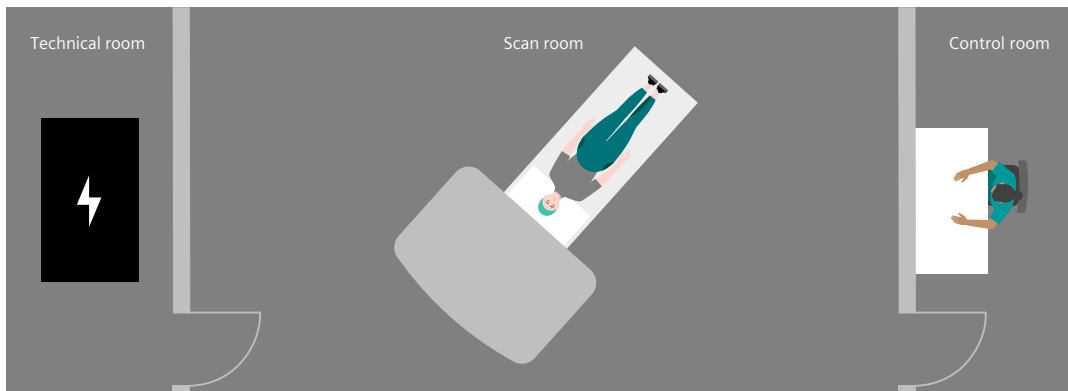
The lifecycle costs of a medical system are key when making a buying decision. SOMATOM Pro.Pulse comes with our Athlon™ X-ray tube, one of the most robust and efficient X-ray tubes in our portfolio. Furthermore, its high tube voltage of 825 mA even at 70 kV allows you to considerably reduce contrast media – and thus examination costs.

### Less power needed

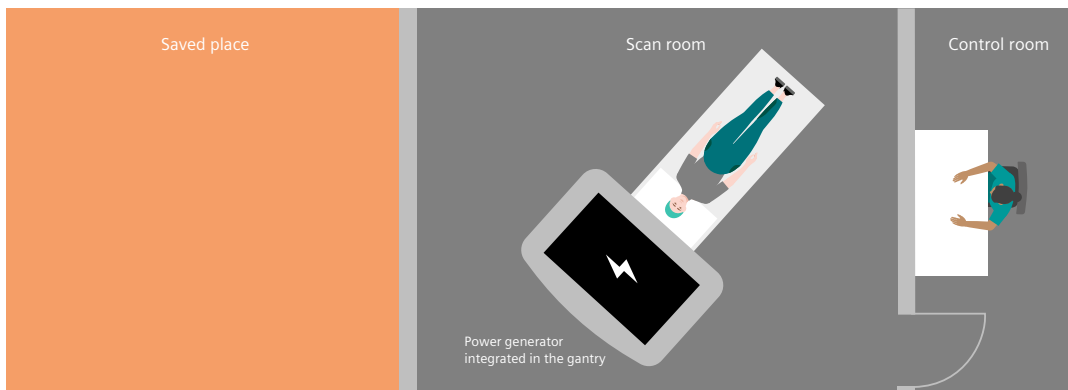
SOMATOM Pro.Pulse is the Dual Source scanner with the lowest power requirements. With up to 150 kW, it has more power than a comparable single source system. At the same time, it is more efficient in terms of power requirements during the installation and power consumption during operation.

### Cost-efficient installation

SOMATOM Pro.Pulse has several features that help reduce installation costs. Air-cooling allows for easy installation without structural changes. The gantry-mounted FAST 3D camera can be easily attached to the front cover. And because the power generator is integrated into the gantry, there is no need for a technical room.



Move from a traditional CT setup ...



... to a more flexible room design with SOMATOM Pro.Pulse.



## Technical specifications

Detectors	2 × Stellar detector based on Multislice UFC (Ultra Fast Ceramic)
X-ray tubes	2 × Athlon® DS X-ray tubes
Number of slices	2 x 128, with IVR
Rotation time	0.33 s, 0.5 s, 1.0 s
Temporal resolution	86 ms
Generator power	150 kW (2 x 75 kW)
kV settings	70-140 kV at 10-kV steps and Sn100, Sn110, Sn120, Sn130, Sn140
Spatial resolution	0.33 mm isotropic resolution
Max. scan speed	372 mm/s
Table load	307 kg / 676 lbs table load

## Technical overview



### Dual Source CT imaging with Athlon® X-ray tube

- 825 mA @ 70/80kV
- 70–140 kV in 10-kV steps
- 0.33 rotation time



### Dual Source CT imaging with the Stellar detector

- TrueSignal technology with full electronic integration
- 0.6 mm collimated and reconstructed slices



### 86 ms native temporal resolution

- Independent of the heart rate



### Tin Filters

- Low-dose early detection
- Tin-filtered topogram



### 37 cm/s acquisition speed

- Reduce the need for sedation
- Most versatile scan mode in the industry
- Freeze motion artifacts



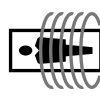
### 50% less dose in dynamic imaging and 30% more energy separation in DE

- Effective separation of energy spectra
- Enables advanced Dual Energy applications such like bone marrow



### FAST 3D Camera gantry-mounted

- Precise isocentering
- Correct patient positioning
- Exact topogram



### Flex 4D Spiral

- Provides optimized dynamic acquisitions with continuously repeated bidirectional table movement during spiral acquisition:
- Extended range for 4D information
  - Perfusion range of up to 8.5 cm in head applications and up to 20 cm in body applications
  - Dynamic CTA studies up to a scan range of 42.5 cm

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